Welcome

The purpose of tonight's open house is to give you an opportunity to:

- Review the purpose and benefits of removing traffic signals
- Learn about the traffic signal removal study process
- Review the study results
- Provide your comments on the proposed traffic signal removals

Project need

Why are we considering removing traffic signals?

- **No longer needed** – Traffic patterns change over time and traffic signals that were needed in the past may not be needed now
- **Not beneficial to transportation system and users** – Traffic signals at **low volume** intersections may cause unnecessary delays for users on all approaches
- **Increased crashes** – Traffic signals stop drivers on the main street creating the potential for crashes. Unnecessary signals increase the frequency of crashes, especially rear-end crashes.

Reference – NCHRP Report 500: A Guide for Reducing Collisions at Signalized Intersections

Project area

Which intersections were candidates for traffic signal removal?

1. 17th Street and June Avenue
2. 17th Street and Jennie Lee Drive
3. 17th Street and Ponderosa Drive
4. 17th Street and St. Clair Road
5. Holmes Avenue and 12th Street
6. Holmes Avenue and 9th Street
7. Holmes Avenue and 7th Street
8. Holmes Avenue and Elva Street
9. Broadway and Lindsay Boulevard
10. Broadway and Shoup Avenue
11. Yellowstone Avenue and A Street
12. Yellowstone Avenue and B Street

Removal benefits

What are the benefits of traffic signal removal?

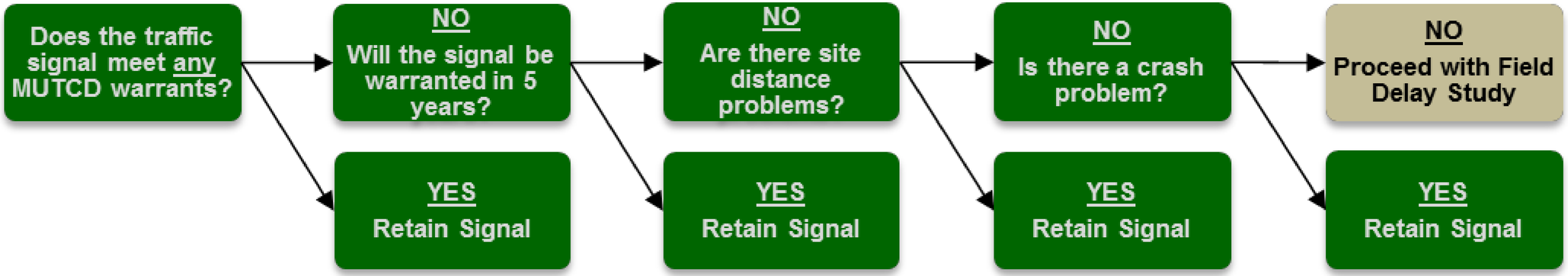
- **Improve traffic operations** – Improve driver experience by reducing vehicle stops, delay and fuel consumption
- **Reduce taxpayer costs** – Reduce traffic signal maintenance, monitoring and operating costs which are approximately $4,700 per traffic signal annually
- **Reduce crashes** – Potentially reduce the number of crashes, especially rear-end crashes

Reference – NCHRP Report 500: A Guide for Reducing Collisions at Signalized Intersections

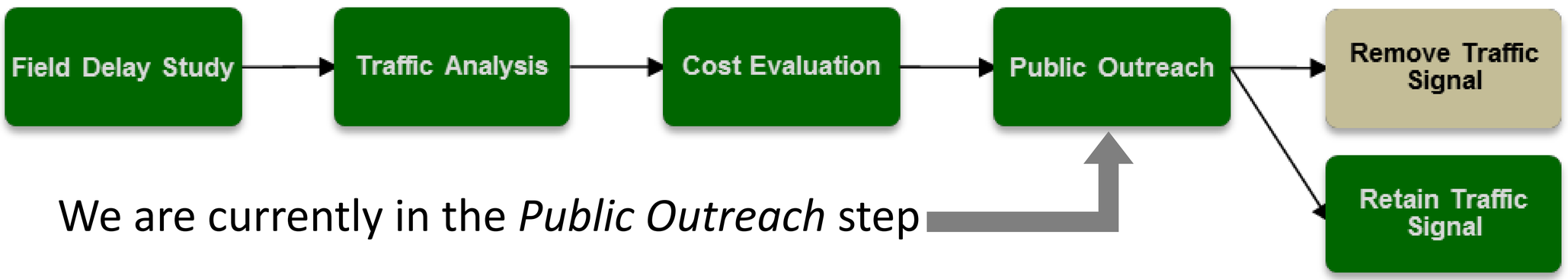
Removal study process

What are the steps of the traffic signal removal study?

- Prescreening Analysis (completed):



- Detailed Analysis (in progress):



The MUTCD (Manual on Uniform Traffic control Devices) is the national standard for traffic signal design and operations

Prescreening analysis

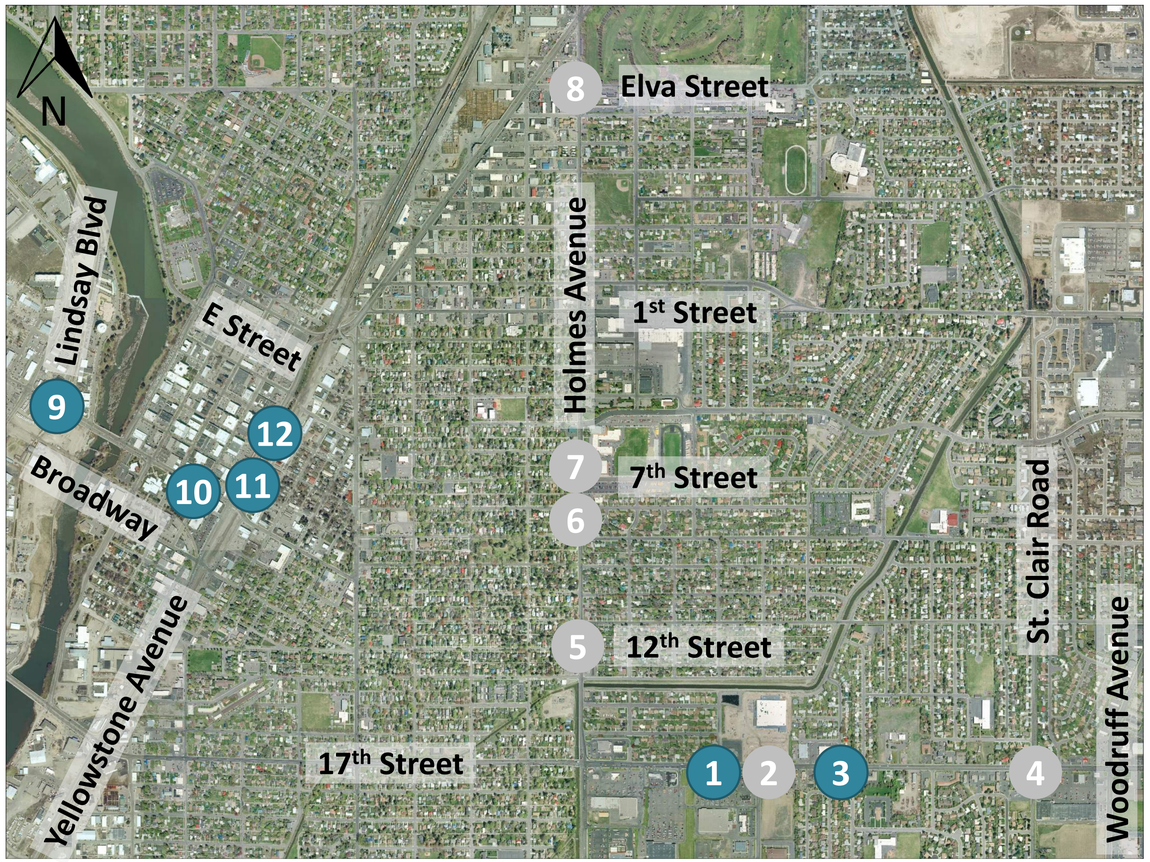
Vehicle and pedestrian volumes, sight distances and crashes were evaluated, and Project Team determined that **6 intersections were candidates for detailed analysis**.

Intersection	Does the traffic signal meet <u>any</u> MUTCD warrants?	Will the signal be warranted in 5 years?	Are there sight distance problems?	Is there a crash problem?	Recommendation
1. 17th and June	No	No	No	No	Detailed Analysis
2. 17th and Jennie Lee	Yes →				Retain Signal
3. 17th and Ponderosa	No	No	No	No	Detailed Analysis
4. 17th and St. Clair	Yes →				Retain Signal
5. Holmes and 12th	Yes →				Retain Signal
6. Holmes and 9th	Yes →				Retain Signal
7. Holmes and 7th	Yes →				Retain Signal
8. Holmes and Elva	Yes →				Retain Signal
9. Broadway and Lindsay	No	No	No	No	Detailed Analysis
10. Broadway and Shoup	No	No	No	No	Detailed Analysis
11. Yellowstone and A	Yes	Yes	No	No	Detailed Analysis*
12. Yellowstone and B	Yes	Yes	No	No	Detailed Analysis*

**MUTCD warrant met; however, detailed analysis performed at the request of ITD*

Field delay study candidates

Six traffic signals were temporarily turned off in May 2016:



1. 17th Street and June Avenue
3. 17th Street and Ponderosa Drive
9. Broadway and Lindsay Boulevard
10. Broadway and Shoup Avenue
11. Yellowstone Avenue and A Street
12. Yellowstone Avenue and B Street

Field delay study process

What is the field delay study?

- **Process** – Measure side street delay *with* and *without* the traffic signal. Traffic signal was turned off and traffic was video recorded after traffic patterns adjusted.
- **Purpose** – Determine if traffic signal removal would have a significant impact on intersection delay, volumes or safety.

Field delay study results

- Results vary by intersection, but on average, **side street delay** was **reduced 14 seconds** *per vehicle* without the traffic signal.
- Left-turn and through travelers experienced the greatest delay benefit with an average **reduction of over 19 seconds** *per vehicle* without the traffic signal.

	Range Vehicle Delay Difference (seconds/vehicle)	Average Vehicle Delay Difference (seconds/vehicle *(%)*)
All Movements	-28 to +5	**-14** ***(-43%)***
Left-Turns	-55 to +7	**-22** ***(-47%)***
Throughs	-48 to +5	**-19** ***(-40%)***
Right-Turns	-9 to +14	**-0.1** ***(0%)***

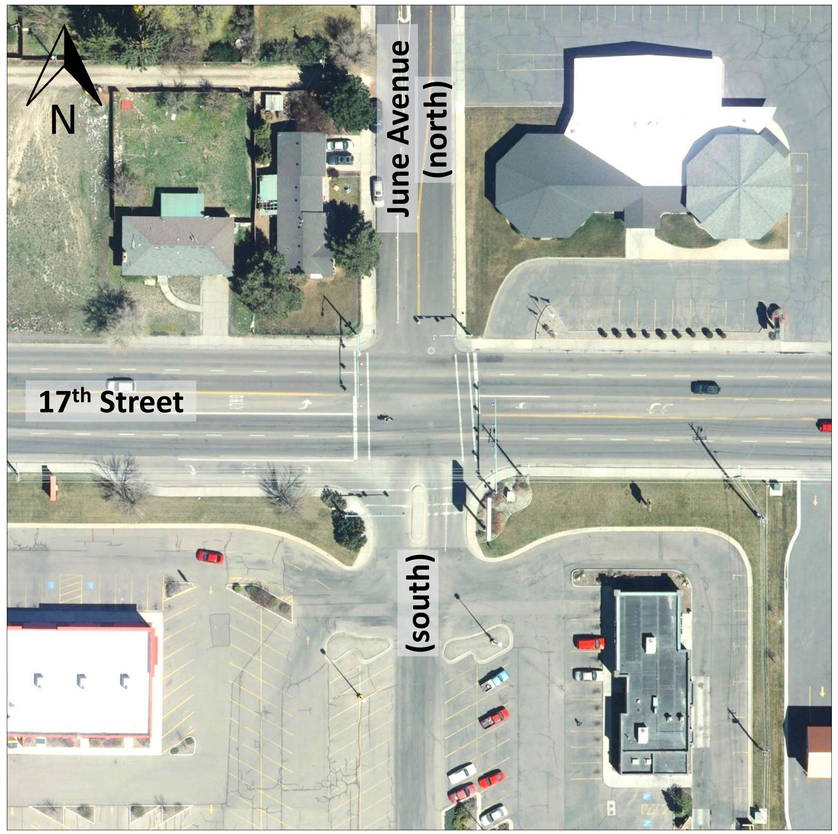
Field delay study results

- Results vary by intersection, but on average, **side street vehicle volume** was **reduced by 21%**.
- Left-turn and through traffic decreased by a larger amount than right-turn traffic. If signals are permanently removed, left-turn and through traffic is expected to return as drivers find their quickest route.

	Range Hourly Vehicle Volume Difference (vehicles)	Average Hourly Vehicle Volume Difference (vehicles *(%)*)
All Movements	-68 to +14	**-14** ***(-21%)***
Left-Turns	-32 to +6	**-9** ***(-36%)***
Throughs	-29 to +16	**-10** ***(-48%)***
Right-Turns	-30 to +19	**+1** ***(+1%)***

1. 17th and June

Delay Study Result: Side street delay *per vehicle* was **reduced 14 seconds** on average without the traffic signal

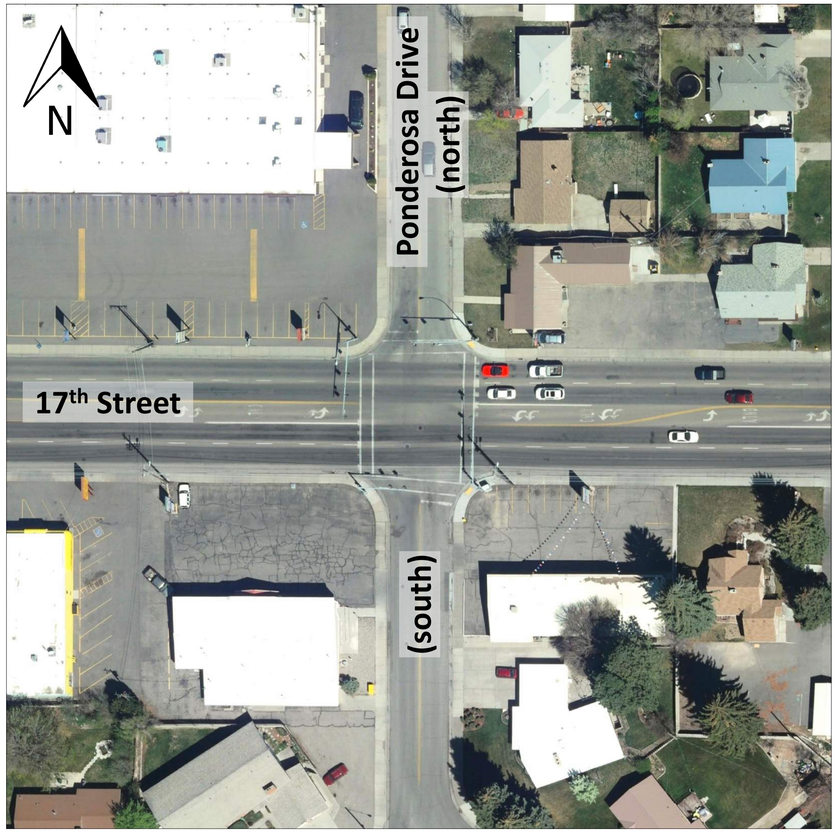


Peak Hour (approach)	Average Vehicle Delay on Highest Volume Side Street (seconds/vehicle)		
	With Traffic Signal	Without Traffic Signal	Difference
AM (north)	35	14	-21
Midday (south)	36	23	-13
PM (south)	39	26	-13

The stops and delays for 17th Street traffic are almost eliminated without the traffic signal

3. 17th and Ponderosa

Delay Study Result: Side street delay *per vehicle* was **reduced 13 seconds** on average without the traffic signal



Peak Hour (approach)	Average Vehicle Delay on Side Street (seconds/vehicle)		
	With Traffic Signal	Without Traffic Signal	Difference
AM (north/south)	25/35	20/14	-5/-21
Midday (north/south)	33/43	38/29	+5/-14
PM (north/south)	49/47	33/29	-16/-18

The stops and delays for 17th Street traffic are almost eliminated without the traffic signal

9. Broadway and Lindsay

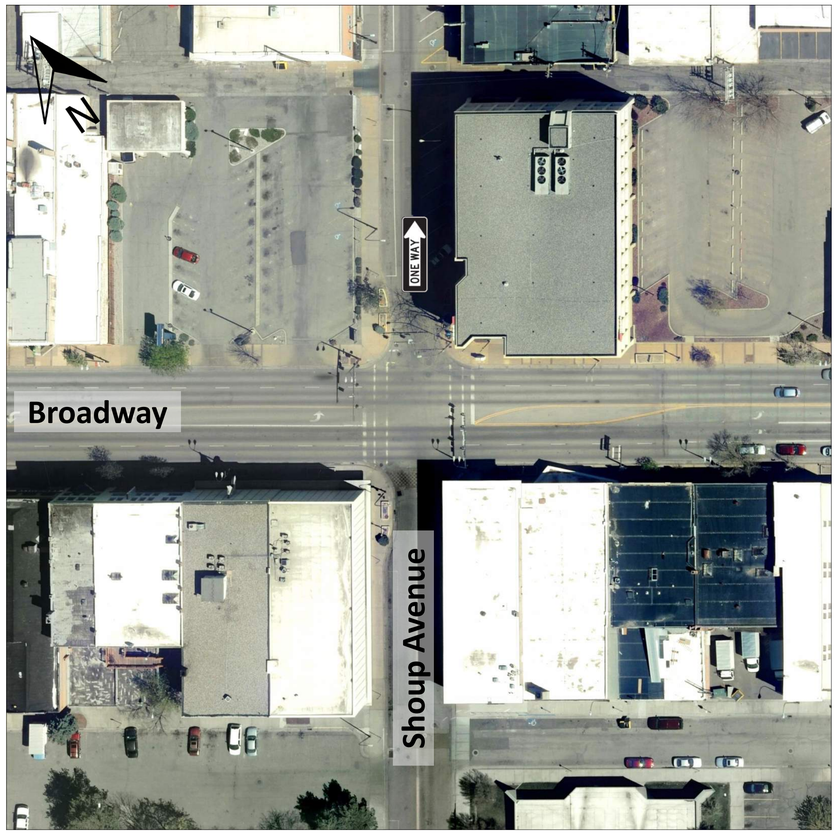
Delay Study Result: Side street delay *per vehicle* was **reduced 19 seconds** on average without the traffic signal

Peak Hour	Average Vehicle Delay on Side Street (seconds/vehicle)		
	With Traffic Signal	Without Traffic Signal	Difference
AM	26	12	-14
Midday	38	17	-21
PM	40	20	-20

The stops and delays for Broadway traffic are almost eliminated without the traffic signal

10. Broadway and Shoup

Delay Study Result: Side street delay *per vehicle* was **reduced 19 seconds** on average without the traffic signal



Peak Hour	Average Vehicle Delay on Side Street (seconds/vehicle)		
	With Traffic Signal	Without Traffic Signal	Difference
AM	39	12	-27
Midday	31	17	-14
PM	43	22	-21

The stops and delays for Broadway traffic are almost eliminated without the traffic signal

11. Yellowstone and A

Delay Study Result: Side street delay *per vehicle* was **reduced 11 seconds** on average without the traffic signal

Peak Hour	Average Vehicle Delay on Side Street (seconds/vehicle)		
	With Traffic Signal	Without Traffic Signal	Difference
AM	28	10	-18
Midday	23	23	0
PM	34	21	-13

The stops and delays for Yellowstone Avenue traffic are almost eliminated without the traffic signal

12. Yellowstone and B

Delay Study Result: Side street delay *per vehicle* was **reduced 7 seconds** on average without the traffic signal

Peak Hour (approach)	Average Vehicle Delay on Highest Volume Side Street (seconds/vehicle)		
	With Traffic Signal	Without Traffic Signal	Difference
AM (west)	21	14	-7
Midday (west)	24	14	-10
PM (west)	25	20	-5

The stops and delays for Yellowstone Avenue traffic are almost eliminated without the traffic signal

Arterial operations

How does removing the traffic signals affect your commute?

- If both traffic signals are removed on each roadway, stops will be reduced, and the following benefits are expected:
  - **Travel Time Reduction**
    - 17th Street – average of **1 second** and up to **68 seconds**
    - Broadway – average of **3 seconds** and up to **43 seconds**
    - Yellowstone – average of **1 second** and up to **38 seconds**
  - **Congestion Savings** – Reductions in delay, travel time and stops result in estimated fuel and user delay savings of $128,000 per year for the three roadways

Safety

What are the expected safety impacts of a traffic signal removal?

- **Historic Crashes** – Crashes are low at all 12 intersections and no extraordinary crash problems exist. **No crashes occurred during the field delay study**.
- **Expected Crashes if Signal is Removed** – Removing unnecessary traffic signals has been shown to decrease all crashes (particularly rear-end crashes) and reduce injury crashes. An increase in 'T-bone' crashes could occur, but overall crashes are expected to decrease.

Reference – NCHRP Report 500: A Guide for Reducing Collisions at Signalized Intersections

<u>Safety First</u> – If crash problems occur at any intersection where a traffic signal is removed, re-installation will be considered.

What's next

- **July and August 2016:** City and ITD will carefully consider all input from this open house and the removal study results to make the final decision on which traffic signals will be removed.
- **October 2016:** Begin removal of traffic signals and **closely monitor safety and traffic operations.**

If operational or crash problems occur, re-installation of the traffic signal will be considered.

Thank you

The City of Idaho Falls and the Idaho Transportation Department thank you for attending tonight's meeting.

Please submit your comments before leaving, or you can email or mail them to the address on the comment form by July 8th.